

Search Plan and Results

Question

In adults, what is the association between intake of sugar-sweetened beverages and energy intake? (DGAC 2010)

In adults, what is the association between intake of sugar-sweetened beverages and body weight? (DGAC 2010)

Date Searched

12/23/09, Updated 2/3/10

Inclusion Criteria

- January 1990 to December 2009 (systematic review search updated February 2010)
- Human subjects
- English language
- International
- *Sample size:* Minimum of 10 subjects per study arm; preference for larger sizes, if available
- *Dropout rate:* Less than 20%; preference for smaller dropout rates
- *Ages:* Adults 19 years and older
- *Populations:* Healthy, those with elevated chronic disease risk.

Exclusion Criteria

- Cross-sectional studies
- Medical treatment or therapy
- Diseased subjects (already diagnosed with disease related to study purpose)
- Hospitalized patients
- Study population not from a developed country as defined by the Human Development Index (<http://hdr.undp.org/en/statistics/>)
- Animal studies
- In vitro studies
- Articles not peer reviewed (websites, magazine articles, Federal reports, etc.).

Search Terms: Search Vocabulary

("Body Weight"[Mesh] OR "overweight"[Mesh] OR obesity[mh] OR adiposity[mh]) AND (added sugar* OR sugar based* or sugar sweetened* or HFCS or high fructose corn syrup* or corn syrup* OR candy OR "dietary sucrose"[Mesh] OR "Liquid sugars" OR Soda pop*) AND ("Energy Intake"[Mesh] OR "Total caloric consumption" OR "energy compensation" OR "dietary compensation" OR "caloric intake" OR

("Body Weight"[Mesh] OR "overweight"[Mesh] OR obesity[mh] OR adiposity[mh]) AND ("Carbonated beverages"[mh] OR Soft drink* OR Sugar-sweetened beverage* OR Sweetened drink*)

Updated search for systematic reviews/meta-analyses (02/03/10)

(added sugar* OR sugar based* OR sugar sweetened* OR HFCS OR high fructose corn syrup* OR corn syrup* OR candy OR "dietary sucrose"[Mesh] OR "Liquid sugars" OR Soda pop* OR "Carbonated beverages"[mh] OR Soft drink* OR Sugar-sweetened beverage* OR Sweetened drink*) AND (systematic[sb] OR Meta-Analysis[ptyp])

Electronic Databases

PubMed

Total hits from all electronic database searches: 497

Total articles identified to review from electronic databases: 79

Articles Identified Via Handsearch or Other Means

Hand search (one study): Flood JE, Roe LS, Rolls BJ. The effect of increased beverage portion size on energy intake at a meal. *J Am Diet Assoc.* 2006 Dec; 106 (12): 1, 984-1, 990; discussion 1, 990-1, 991. PMID: 17126628.

Summary of Articles Identified to Review

Number of Primary Articles Identified: 10

Number of Review Articles Identified: 4

Total Number of Articles Identified: 14

Number of Articles Reviewed but Excluded: 66

List of Articles Included for Evidence Analysis

In adults, what is the association between the intake of sugar-sweetened beverages and energy intake?

Systematic Reviews / Meta-Analyses:

Vartanian LR, Schwartz MB, Brownell KD. [Effects of soft drink consumption on nutrition and health: A systematic review and meta-analysis](#). *Am J Public Health*. 2007 Apr; 97 (4): 667-675. Epub 2007 Feb 28. Review. PMID: 17329656; PMCID: PMC1829363.

Primary Citations:

Flood JE, Roe LS, Rolls BJ. [The effect of increased beverage portion size on energy intake at a meal](#). *J Am Diet Assoc*. 2006 Dec; 106 (12): 1, 984-1, 990; discussion 1990-1991. PMID: 17126628. (Hand search)

Reid M, Hammersley R, Hill AJ, Skidmore P. [Long-term dietary compensation for added sugar: effects of supplementary sucrose drinks over a four-week period](#). *Br J Nutr*. 2007 Jan; 97 (1): 193-203. PMID: 17217576.

Soenen S, Westerterp-Plantenga MS. [No differences in satiety or energy intake after high-fructose corn syrup, sucrose or milk preloads](#). *Am J Clin Nutr*. 2007 Dec; 86 (6): 1, 586-1, 594. Erratum in: *Am J Clin Nutr*. 2008 Apr; 87 (4): 1, 071. PMID: 18065574.

Stookey JD, Constant F, Gardner CD, Popkin BM. [Replacing sweetened caloric beverages with drinking water is associated with lower energy intake](#). *Obesity (Silver Spring)*. 2007 Dec; 15 (12): 3, 013-3, 022. PMID: 18198310.

In adults, what is the association between the intake of sugar-sweetened beverages and body weight?

Systematic Reviews / Meta-Analyses:

Gibson S. [Sugar-sweetened soft drinks and obesity: a systematic review of the evidence from observational studies and interventions](#). *Nutr Res Rev*. 2008 Dec; 21 (2): 134-147. Review. PMID: 19087367.

Malik VS, Schulze MB, Hu FB. [Intake of sugar-sweetened beverages and weight gain: A systematic review](#). *Am J Clin Nutr*. 2006 Aug; 84 (2): 274-288. Review. PMID: 16895873.

Ruxton CH, Gardner EJ, McNulty HM. [Is sugar consumption detrimental to health? A review of the evidence 1995-2006](#). *Crit Rev Food Sci Nutr*. 2010 Jan; 50 (1): 1-19. PMID: 20047137.

Vartanian LR, Schwartz MB, Brownell KD. [Effects of soft drink consumption on nutrition and health: a systematic review and meta-analysis](#). *Am J Public Health*. 2007 Apr; 97 (4): 667-675. Epub 2007 Feb 28. Review. PMID: 17329656; PMCID: PMC1829363.

Primary Citations:

Trials

Raben A, Macdonald I, Astrup A. [Replacement of dietary fat by sucrose or starch: effects on 14-day ad libitum energy intake, energy expenditure and body weight in formerly obese and never-obese subjects](#). *Int J Obes Relat Metab Disord*. 1997 Oct; 21 (10): 846-859. PMID: 9347402.

Reid M, Hammersley R, Hill AJ, Skidmore P. [Long-term dietary compensation for](#)

[added sugar: Effects of supplementary sucrose drinks over a four-week period. Br J Nutr.](#) 2007 Jan; 97 (1): 193-203. PMID: 17217576.

Stanhope KL, Schwarz JM, Keim NL, Griffen SC, Bremer AA, Graham JL, Hatcher B, Cox CL, Dyachenko A, Zhang W, McGahan JP, Seibert A, Krauss RM, Chiu S, Schaefer EJ, Ai M, Otokozawa S, Nakajima K, Nakano T, Beysen C, Hellerstein MK, Berglund L, Havel PJ. [Consuming fructose-sweetened, not glucose-sweetened, beverages increases visceral adiposity and lipids and decreases insulin sensitivity in overweight or obese humans. J Clin Invest.](#) 2009 May; 119 (5): 1, 322-1, 334. doi: 10.1172/JCI37385. Epub 2009 Apr 20. PMID: 19381015; PMCID: PMC2673878.

Surwit RS, Feinglos MN, McCaskill CC, Clay SL, Babyak MA, Brownlow BS, Plaisted CS, Lin PH. [Metabolic and behavioral effects of a high-sucrose diet during weight loss. Am J Clin Nutr.](#) 1997 Apr; 65 (4): 908-915. PMID: 9094871.

Prospective Observational

Chen L, Appel LJ, Loria C, Lin PH, Champagne CM, Elmer PJ, Ard JD, Mitchell D, Batch BC, Svetkey LP, Caballero B. [Reduction in consumption of sugar-sweetened beverages is associated with weight loss: The PREMIER trial. Am J Clin Nutr.](#) 2009 May; 89 (5): 1, 299-1, 306. Epub 2009 Apr 1. PMID: 19339405; PMCID: PMC2676995.

Dhingra R, Sullivan L, Jacques PF, Wang TJ, Fox CS, Meigs JB, D'Agostino RB, Gaziano JM, Vasan RS. [Soft drink consumption and risk of developing cardiometabolic risk factors and the metabolic syndrome in middle-aged adults in the community. Circulation.](#) 2007 Jul 31; 116 (5): 480-488. Epub 2007 Jul 23. Erratum in: [Circulation.](#) 2007 Dec 4; 116 (23): e557. PMID: 17646581.

Palmer JR, Boggs DA, Krishnan S, Hu FB, Singer M, Rosenberg L. [Sugar-sweetened beverages and incidence of type 2 diabetes mellitus in African American women. Arch Intern Med.](#) 2008 Jul 28; 168 (14): 1, 487-1, 492. PMID: 18663160; PMCID: PMC2708080.

List of Excluded Articles with Reason

| Article (A-K) | Reason for Exclusion |
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| Babey SH, Jones M, Yu H, Goldstein H. <u>Bubbling over: soda consumption and its link to obesity in California. Policy Brief UCLA Cent Health Policy Res.</u> 2009 Sep; (PB2009-5): 1-8. PMID: 19768858. | Article is policy brief. |

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| <p>Barkeling B, Andersson I, Lindroos AK, Birkhed D, Rössner S. Intake of sweet foods and counts of cariogenic microorganisms in obese and normal-weight women. <i>Eur J Clin Nutr.</i> 2001 Oct; 55 (10): 850-855. PMID: 11593346.</p> | <p>Study design is cross-sectional.</p> |
| <p>Barkeling B, Linné Y, Lindroos AK, Birkhed D, Rooth P, Rössner S. Intake of sweet foods and counts of cariogenic microorganisms in relation to body mass index and psychometric variables in women. <i>Int J Obes Relat Metab Disord.</i> 2002 Sep; 26(9): 1, 239-1, 244. PMID: 12187402.</p> | <p>Study design is cross-sectional.</p> |
| <p>Barquera S, Hernandez-Barrera L, Tolentino ML, Espinosa J, Ng SW, Rivera JA, Popkin BM. Energy intake from beverages is increasing among Mexican adolescents and adults. <i>J Nutr.</i> 2008 Dec; 138(12): 2, 454-2, 461. PMID: 19022972.</p> | <p>Does not include energy intake or body weight in analyses.</p> |
| <p>Bergen D, Yeh MC. Effects of energy-content labels and motivational posters on sales of sugar-sweetened beverages: Stimulating sales of diet drinks among adults study. <i>J Am Diet Assoc.</i> 2006 Nov; 106(11): 1, 866-1, 869. PMID: 17081839.</p> | <p>Does not answer question: Examines the impact of labels and posters on beverage sales.</p> |
| <p>Bes-Rastrollo M, Sánchez-Villegas A, Gómez-Gracia E, Martínez JA, Pajares RM, Martínez-González MA. Predictors of weight gain in a Mediterranean cohort: The Seguimiento Universidad de Navarra Study 1. <i>Am J Clin Nutr.</i> 2006 Feb; 83 (2): 362-370; quiz 394-395. PMID: 16469996.</p> | <p>Included in Malik (2006), Vartanian (2007), and Gibson (2008) systematic reviews.</p> |
| <p>Bleich SN, Wang YC, Wang Y, Gortmaker SL. Increasing consumption of sugar-sweetened beverages among US adults: 1988-1994 to 1999-2004. <i>Am J Clin Nutr.</i> 2009 Jan; 89(1): 372-381. Epub 2008 Dec 3. PMID: 19056548.</p> | <p>Does not include energy intake or body weight in analyses.</p> |
| <p>Bowman SA, Vinyard BT. Fast food consumption of US adults: Impact on energy and nutrient intakes and overweight status. <i>J Am Coll Nutr.</i> 2004 Apr; 23(2): 163-168. PMID: 15047683.</p> | <p>Does not include the consumption of added sugars in analyses.</p> |
| <p>Bray GA, Nielsen SJ, Popkin BM. Consumption of high-fructose corn syrup in beverages may play a role in the epidemic of obesity. <i>Am J Clin Nutr.</i> 2004 Apr; 79 (4): 537-543. Review. Erratum in: <i>Am J Clin Nutr.</i> 2004 Oct; 80(4): 1, 090. PMID: 15051594.</p> | <p>Article is a commentary.</p> |

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| <p>Brown CM, Dulloo AG, Montani JP. Sugary drinks in the pathogenesis of obesity and cardiovascular diseases. <i>Int J Obes (Lond)</i>. 2008 Dec; 32 Suppl 6: S28-S34. Review. PMID: 19079277.</p> | <p>Study design is narrative review.</p> |
| <p>Chacko E, McDuff I, Jackson R. Replacing sugar-based soft drinks with sugar-free alternatives could slow the progress of the obesity epidemic: Have your Coke and drink it too. <i>N Z Med J</i>. 2003 Oct 24; 116(1, 184): U649. PMID: 14583807.</p> | <p>Article is a commentary.</p> |
| <p>Charlton KE, Kolbe-Alexander TL, Nel JH. Micronutrient dilution associated with added sugar intake in elderly black South African women. <i>Eur J Clin Nutr</i>. 2005 Sep; 59(9): 1, 030-1, 042. PMID: 16015273.</p> | <p>Study population not from a developed country as defined by the Human Development Index (2009).</p> |
| <p>Claesson AL, Holm G, Ernersson A, Lindström T, Nystrom FH. Two weeks of overfeeding with candy, but not peanuts, increases insulin levels and body weight. <i>Scand J Clin Lab Invest</i>. 2009; 69 (5): 598-605. PMID: 19396658.</p> | <p>Does not include sugar-sweetened beverages in analyses.</p> |
| <p>Crowe TC, Fontaine HL, Gibbons CJ, Cameron-Smith D, Swinburn BA. Energy density of foods and beverages in the Australian food supply: Influence of macronutrients and comparison to dietary intake. <i>Eur J Clin Nutr</i>. 2004 Nov; 58 (11): 1, 485-1, 491. PMID: 15173855.</p> | <p>Does not include energy intake or body weight in analyses.</p> |
| <p>Dennis EA, Flack KD, Davy BM. Beverage consumption and adult weight management: A review. <i>Eat Behav</i>. 2009 Dec; 10(4): 237-246. Epub 2009 Jul 16. Review. PMID: 19778754.</p> | <p>Study design is narrative review.</p> |
| <p>Duffey KJ, Popkin BM. High-fructose corn syrup: Is this what's for dinner? <i>Am J Clin Nutr</i>. 2008 Dec; 88 (6): 1, 722S-1, 732S. PubMed PMID: 19064537; PubMed Central PMCID: PMC2746720.</p> | <p>Does not include energy intake or body weight in analyses.</p> |
| <p>Epstein LH, Gordy CC, Raynor HA, Beddome M, Kilanowski CK, Paluch R. Increasing fruit and vegetable intake and decreasing fat and sugar intake in families at risk for childhood obesity. <i>Obes Res</i>. 2001 Mar; 9 (3): 171-178. PMID: 11323442.</p> | <p>Does not answer question: examined behavioral weight-control programs.</p> |
| <p>Forshee RA, Storey ML, Allison DB, Glinsmann WH, Hein GL, Lineback DR, Miller SA, Nicklas TA, Weaver GA, White JS. A critical examination of the evidence relating high fructose corn syrup and weight gain. <i>Crit Rev Food Sci Nutr</i>. 2007; 47 (6): 561-582. Review. PMID: 17653981.</p> | <p>Study design is narrative review.</p> |

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| <p>Fowler SP, Williams K, Resendez RG, Hunt KJ, Hazuda HP, Stern MP. Fueling the obesity epidemic? Artificially sweetened beverage use and long-term weight gain. <i>Obesity</i> (Silver Spring). 2008 Aug; 16(8): 1, 894-1, 900. Epub 2008 Jun 5. PMID: 18535548.</p> | <p>Does not include sugar-sweetened beverages in analyses.</p> |
| <p>Frazier CR, Mason P, Zhuang X, Beeler JA. Sucrose exposure in early life alters adult motivation and weight gain. <i>PLoS One</i>. 2008 Sep 17; 3(9): e3, 221. PMID: 18797507; PMCID: PMC2529404.</p> | <p>Study tested animals.</p> |
| <p>Gatenby SJ, Aaron JI, Jack VA, Mela DJ. Extended use of foods modified in fat and sugar content: nutritional implications in a free-living female population. <i>Am J Clin Nutr</i>. 1997 Jun; 65 (6): 1, 867-1, 873. PMID: 9174485.</p> | <p>Does not answer question: examined reduced-sugar and reduced-fat products.</p> |
| <p>Gibson SA. Are high-fat, high-sugar foods and diets conducive to obesity? <i>Int J Food Sci Nutr</i>. 1996 Sep; 47(5): 405-415. PMID: 8889626.</p> | <p>Study design is cross-sectional.</p> |
| <p>Gibson SA. Dietary sugars intake and micronutrient adequacy: A systematic review of the evidence. <i>Nutr Rev</i>. 2007 Dec; 20(2): 121-131. PMID: 19079865.</p> | <p>Does not include energy intake or body weight in analyses.</p> |
| <p>Guerrero RT, Paulino YC, Novotny R, Murphy SP. Diet and obesity among Chamorro and Filipino adults on Guam. <i>Asia Pac J Clin Nutr</i>. 2008; 17(2): 216-222. PMID: 18586639; PMCID: PMC2762033.</p> | <p>Study population not from a developed country.</p> |
| <p>Hudson SM, Dixon JB, O'Brien PE. Sweet eating is not a predictor of outcome after Lap-Band placement. Can we finally bury the myth? <i>Obes Surg</i>. 2002 Dec; 12(6): 789-794. PMID: 12568183.</p> | <p>Participants had Lap-Band surgery.</p> |
| <p>Huffman L, West DS. Readiness to change sugar sweetened beverage intake among college students. <i>Eat Behav</i>. 2007 Jan; 8 (1): 10-14. Epub 2006 May 30. PMID: 17174846.</p> | <p>Does not include energy intake or body weight in analyses.</p> |
| <p>Joyce T, McCarthy SN, Gibney MJ. Relationship between energy from added sugars and frequency of added sugars intake in Irish children, teenagers and adults. <i>Br J Nutr</i>. 2008 May; 99 (5): 1, 117-1, 126. Epub 2007 Dec 21. PMID: 18096092.</p> | <p>Does not include energy intake or body weight in analyses.</p> |
| <p>Julis RA, Mattes RD. Influence of sweetened chewing gum on appetite, meal patterning and energy intake. <i>Appetite</i>. 2007 Mar; 48(2): 167-175. Epub 2006 Oct 13. PMID: 17050036.</p> | <p>Does not include sugar-sweetened beverages in analyses.</p> |

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| <p>Kasim-Karakas SE, Almario RU, Cunningham W. <u>Effects of protein versus simple sugar intake on weight loss in polycystic ovary syndrome (according to the National Institutes of Health criteria).</u> <i>Fertil Steril.</i> 2009 Jul; 92(1): 262-270. Epub 2008 Aug 8. PubMed PMID: 18691705.</p> | <p>Participants diagnosed with polycystic ovary syndrome.</p> |
| <p>Krahn D, Grossman J, Henk H, Mussey M, Crosby R, Gosnell B. <u>Sweet intake, sweet-liking, urges to eat and weight change: Relationship to alcohol dependence and abstinence.</u> <i>Addict Behav.</i> 2006 Apr; 31 (4): 622-631. Epub 2005 Jun 29. PMID: 15990241.</p> | <p>Participants diagnosed with alcohol dependence.</p> |
| <p>Kvaavik E, Andersen LF, Klepp KI. <u>The stability of soft drinks intake from adolescence to adult age and the association between long-term consumption of soft drinks and lifestyle factors and body weight.</u> <i>Public Health Nutr.</i> 2005 Apr; 8(2): 149-157. PMID: 15877908.</p> | <p>Included in Malik (2006), Gibson (2008), and Vartanian (2007) systematic reviews.</p> |

| Article (L-S) | Reason for Exclusion |
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| <p>Leth T, Jensen U, Fagt S, Andersen R. <u>Estimated intake of intense sweeteners from non-alcoholic beverages in Denmark, 2005.</u> <i>Food Addit Contam Part A Chem Anal Control Expo Risk Assess.</i> 2008 Jun; 25 (6): 662-668. PMID: 18484294.</p> | <p>Does not include sugar-sweetened beverages or energy intake/body weight in analyses.</p> |
| <p>Lewis CJ, Park YK, Dexter PB, Yetley EA. <u>Nutrient intakes and body weights of persons consuming high and moderate levels of added sugars.</u> <i>J Am Diet Assoc.</i> 1992 Jun; 92 (6): 708-713. PMID: 1607567.</p> | <p>Study design is cross-sectional.</p> |
| <p>Liebman M, Pelican S, Moore SA, Holmes B, Wardlaw MK, Melcher LM, Liddil AC, Paul LC, Dunnagan T, Haynes GW. <u>Dietary intake, eating behavior, and physical activity-related determinants of high body mass index in rural communities in Wyoming, Montana and Idaho.</u> <i>Int J Obes Relat Metab Disord.</i> 2003 Jun; 27 (6): 684-692. PMID: 12833112.</p> | <p>Included in Malik (2006), Vartanian (2007), and Gibson (2008) systematic reviews.</p> |
| <p>Livesey G, Taylor R. <u>Fructose consumption and consequences for glycation, plasma triacylglycerol, and body weight: Meta-analyses and meta-regression models of intervention studies.</u> <i>Am J Clin Nutr.</i> 2008 Nov; 88 (5): 1, 419-1, 437. PMID: 18996880.</p> | <p>Does not answer question: examined relationship between fructose consumption and health outcomes.</p> |

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| <p>Macdiarmid JI, Vail A, Cade JE, Blundell JE. The sugar-fat relationship revisited: Differences in consumption between men and women of varying BMI. <i>Int J Obes Relat Metab Disord</i>. 1998 Nov; 22(11): 1, 053-1, 061. PMID: 9822942.</p> | <p>Study design is cross-sectional.</p> |
| <p>Melanson KJ, Zukley L, Lowndes J, Nguyen V, Angelopoulos TJ, Rippe JM. Effects of high-fructose corn syrup and sucrose consumption on circulating glucose, insulin, leptin, and ghrelin and on appetite in normal-weight women. <i>Nutrition</i>. 2007 Feb; 23 (2): 103-112. PMID: 17234503.</p> | <p>Does not include body weight as an outcome.</p> |
| <p>Miller WC, Niederpruem MG, Wallace JP, Lindeman AK. Dietary fat, sugar and fiber predict body fat content. <i>J Am Diet Assoc</i>. 1994 Jun; 94(6): 612-615. PMID: 8195547.</p> | <p>Study design is cross-sectional.</p> |
| <p>Parnell W, Wilson N, Alexander D, Wohlers M, Williden M, Mann J, Gray A. Exploring the relationship between sugars and obesity. <i>Public Health Nutr</i>. 2008 Aug; 11 (8): 860-866. Epub 2007 Sep 21. PMID: 17888201.</p> | <p>Study design is cross-sectional.</p> |
| <p>Pivonka EE, Grunewald KK. Aspartame- or sugar-sweetened beverages: Effects on mood in young women. <i>J Am Diet Assoc</i>. 1990 Feb; 90 (2): 250-254. PMID: 2303661.</p> | <p>Does not include body weight as an outcome.</p> |
| <p>Promdee L, Trakulthong J, Kangwantrakul W. Sucrose consumption in Thai undergraduate students. <i>Asia Pac J Clin Nutr</i>. 2007; 16 Suppl 1: 22-26. PMID: 17392071.</p> | <p>Study population not from a developed country as defined by the Human Development Index (2009).</p> |
| <p>Quatromoni PA, Pencina M, Cobain MR, Jacques PF, D'Agostino RB. Dietary quality predicts adult weight gain: Findings from the Framingham Offspring Study. <i>Obesity</i> (Silver Spring). 2006 Aug; 14 (8): 1, 383-1, 391. PMID: 16988081.</p> | <p>Does not answer question: Examined diet quality and weight gain.</p> |
| <p>Quílez J, Bulló M, Salas-Salvadó J. Improved postprandial response and feeling of satiety after consumption of low-calorie muffins with maltitol and high-amylose corn starch. <i>J Food Sci</i>. 2007 Aug; 72 (6): S407-S411. PMID: 17995698.</p> | <p>Does not answer question: Did not examine relationship between sugar-sweetened beverages and body weight.</p> |
| <p>Raben A, Vasilaras TH, Møller AC, Astrup A. Sucrose compared with artificial sweeteners: Different effects on ad libitum food intake and body weight after 10 weeks of supplementation in overweight subjects. <i>Am J Clin Nutr</i>. 2002 Oct;</p> | <p>Included in Malik (2006), Gibson (2008), Ruxton (2010) and Vartanian (2007) systematic reviews.</p> |

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| 76(4): 721-729. PMID: 12324283. | |
| Rehm CD, Matte TD, Van Wye G, Young C, Frieden TR. Demographic and behavioral factors associated with daily sugar-sweetened soda consumption in New York City adults . <i>J Urban Health</i> . 2008 May; 85 (3): 375-385. Epub 2008 Mar 18. PMID: 18347992; PMCID: PMC2329746. | Study design is cross-sectional. |
| Rennie KL, Livingstone MB. Associations between dietary added sugar intake and micronutrient intake: A systematic review . <i>Br J Nutr</i> . 2007 May; 97(5): 832-841. Review. PMID: 17408523. | Does not include energy intake or body weight in analyses. |
| Reyna NY, Cano C, Bermúdez VJ, Medina MT, Souki AJ, Ambard M, Nuñez M, Ferrer MA, Inglett GE. Sweeteners and beta-glucans improve metabolic and anthropometrics variables in well controlled type 2 diabetic patients . <i>Am J Ther</i> . 2003 Nov-Dec; 10 (6): 438-443. PMID: 14624282. | Participants diagnosed with type 2 diabetes. |
| Ritchie LD, Spector P, Stevens MJ, Schmidt MM, Schreiber GB, Striegel-Moore RH, Wang MC, Crawford PB. Dietary patterns in adolescence are related to adiposity in young adulthood in black and white females . <i>J Nutr</i> . 2007 Feb; 137 (2): 399-406. PMID: 17237318. | Does not include added sugars intake, specifically, in analyses. Examined dietary patterns. |
| Rodearmel SJ, Wyatt HR, Stroebele N, Smith SM, Ogden LG, Hill JO. Small changes in dietary sugar and physical activity as an approach to preventing excessive weight gain: The America on the Move family study . <i>Pediatrics</i> . 2007 Oct; 120 (4): e869-e879. PMID: 17908743. | Does not answer question: Examines an intervention program (America on the Move) and does not directly assess the relationship between added sugars on body weight. |
| Rush E, Schulz S, Obolonkin V, Simmons D, Plank L. Are energy drinks contributing to the obesity epidemic? <i>Asia Pac J Clin Nutr</i> . 2006; 15(2): 242-244. PMID: 16672210. | Does not include energy intake or body weight as an outcome. |
| Schiffman SS, Graham BG, Sattely-Miller EA, Peterson-Dancy M. Elevated and sustained desire for sweet taste in African-Americans: A potential factor in the development of obesity . <i>Nutrition</i> . 2000 Oct; 16 (10): 886-893. PMID: 11054593. | Does not answer question: Examines oral habituation to sweet taste. |
| Schulze MB, Manson JE, Ludwig DS, Colditz GA, Stampfer MJ, Willett WC, Hu FB. Sugar-sweetened beverages, weight gain, and incidence of type 2 diabetes in young and middle-aged women . <i>JAMA</i> . 2004 Aug 25; 292 (8): 927-934. PMID: 15328324. | Included in Malik (2006), Gibson (2008), and Vartanian (2007) systematic reviews. |

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| <p>Shubair MM, McColl RS, Hanning RM. Mediterranean dietary components and body mass index in adults: The peel nutrition and heart health survey. <i>Chronic Dis Can.</i> 2005 Spring-Summer; 26 (2-3): 43-51. PMID: 16251009.</p> | <p>Does not include added sugars intake, specifically, in analyses. Examined dietary patterns.</p> |
| <p>Sørensen LB, Raben A, Stender S, Astrup A. Effect of sucrose on inflammatory markers in overweight humans. <i>Am J Clin Nutr.</i> 2005 Aug; 82(2): 421-427. PMID: 16087988.</p> | <p>Included in Malik (2006).</p> |
| <p>Stanhope KL, Griffen SC, Bair BR, Swarbrick MM, Keim NL, Havel PJ. 24-hour endocrine and metabolic profiles following consumption of high-fructose corn syrup-, sucrose-, fructose- and glucose-sweetened beverages with meals. <i>Am J Clin Nutr.</i> 2008 May; 87 (5): 1, 194-1, 203. PMID: 18469239.</p> | <p>Does not answer question: examines postprandial hormone response to various beverages.</p> |
| <p>Sun SZ, Empie MW. Lack of findings for the association between obesity risk and usual sugar-sweetened beverage consumption in adults: A primary analysis of databases of CSFII-1989-1991, CSFII-1994-1998, NHANES III and combined NHANES 1999-2002. <i>Food Chem Toxicol.</i> 2007 Aug; 45 (8): 1, 523-1, 536. Epub 2007 Feb 17. PMID: 17383789.</p> | <p>Included in Gibson (2008) systematic review.</p> |

| Article (T-Z) | Reason for Exclusion |
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| <p>Tordoff MG, Alleva AM. Effect of drinking soda sweetened with aspartame or high-fructose corn syrup on food intake and body weight. <i>Am J Clin Nutr.</i> 1990 Jun; 51 (6): 963-969. PMID: 2349932.</p> | <p>Included in Malik (2006) and Vartanian (2007) systematic reviews.</p> |
| <p>Vågstrand K, Karin Lindroos A, Birkhed D, Linné Y. Associations between salivary bacteria and reported sugar intake and their relationship with body mass index in women and their adolescent children. <i>Public Health Nutr.</i> 2008 Apr; 11(4): 341-348. Epub 2007 Jul 3. PMID: 17605840.</p> | <p>Study design is cross-sectional.</p> |
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